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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,383	02/12/2001	Karel Elbert Kuijk	NL 000045	1640

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EXAMINER

PIZIALI, JEFFREY J

ART UNIT PAPER NUMBER

2673

DATE MAILED: 09/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/781,383

Applicant(s)

KUIJK, KAREL ELBERT

Examiner

Jeff Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because the abstract should be a single paragraph, and contain no reference to figure 6 (see line 5). Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimura et al. (US 5,677,705).

Regarding claim 1, Shimura discloses a display device [Fig. 1, 32] comprising a liquid crystal between a first substrate provided with row/selection electrodes [Fig. 1, 29-31] and a second substrate provided with column/data electrodes [Fig. 1, 23-25], in which overlapping parts of row and column electrodes define pixels, drive means [Fig. 1, 22] for driving the column

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electrodes in conformity with an image to be displayed, and drive means [Fig. 1, 28] for driving the row electrodes which, in the operating condition, sequentially supply groups of p row electrodes with p mutually orthogonal signals [Fig. 3, $f(1-N)$], characterized in that the mutually orthogonal signals are obtained from at least two types of orthogonal functions having four elementary units of time [Fig. 3, t], within which four elementary units of time one pulse time each time has a polarity which is different from that of the other pulses (see Column 1, Lines 39-60).

Regarding claim 2, Shimura discloses the orthogonal signals are obtained from orthogonal functions having four elementary units of time, within which four elementary units of time the pulse having a polarity which differs from that of the other pulses each time shifts by one elementary unit of time (see Fig. 3; Column 1, Lines 39-60).

Regarding claim 3, Shimura discloses the orthogonal signals are obtained from orthogonal functions having four elementary units of time which, viewed in a time sequence, are situated one after the other (see Fig. 3; Column 1, Lines 39-60).

Regarding claim 4, Shimura discloses at least two orthogonal signals have opposed DC contents (see Fig. 3; Column 1, Lines 39-60).

Regarding claim 5, Shimura discloses the orthogonal signals are obtained from orthogonal functions having four elementary units of time, in which the elementary units of the orthogonal functions are interwoven (see Fig. 3; Column 1, Line 61 - Column 5, Line 60).

Regarding claim 6, Shimura discloses $p=4$, and in that four orthogonal signals have identical DC contents and four are free from a DC voltage (see Fig. 3; Column 1, Lines 39-60).

Regarding claim 7, Shimura discloses the DC content of 2 orthogonal signals of the orthogonal signals having an identical DC content is opposed to that of the two other orthogonal signals (see Fig. 3; Column 1, Lines 39-60).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimura et al. (US 5,677,705) in view of Ito et al. (US 6,252,573).

Regarding claim 8, Shimura does not expressly disclose the drive means inverting the orthogonal signals after each frame period. However, Ito does disclose inverting orthogonal signals after each frame period (see Figs. 8A-D; Column 17, Lines 1-65). Shimura and Ito are analogous art because they are from the shared field of LCD device driving methods. Therefore,

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it would have been obvious to one skilled in the art at the time of invention to use Ito's per-frame inversion technique with Shimura's display device, so as to maintain display brightness and prevent a reduction in contrast.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schouhamer Immink (US 4,802,190), Yamamoto et al. (US 5,610,628), Kudo et al. (US 5,861,863), Hoshino et al. (US 5,696,524), Tanaka et al. (US 5,764,213), Mano et al. (US 5,977,943), and Williams et al. (US 6,421,033) are cited to further evidence the state of the art pertaining to display devices.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (703) 305-8382. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


J.P.

September 16, 2002


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